

5/5/00
Dale
Romero

Safety Precautions when jumping for BLM Smokejumpers

There is an elaborate set of steps that prepare returning smokejumpers for the first practice jump of the season. These procedures are for jumpers who have been trained in the BLM ram-air parachute system and have had, at a minimum, one season on the system. The following is some of the training everyone is required to go through but it is by no means the entire training.

Aircraft Procedures:

The objectives are to refresh/train jumpers on standard operating procedures when conducting smokejumper missions onboard the aircraft. On take off and landing, helmets, gloves, nomex jumpsuit and seatbelts are to be used. When the jump door is off, the reserve handle must be guarded at all times. On jump runs, jumpers "chute up" twenty minutes out from the fire. Buddy checks are given by the jump partners, spotter, or assistant spotter. (On practice/refresher jumps, buddy checks are given on the ground.) Once the door is open, jumpers guard their reserve. A final ring check on the main risers is given. This is in addition to the buddy check and there is no set time as to when to perform this last ring check. The spotter chooses a jump spot, throws streamers, and prepares to drop jumpers. Jumpers are told the jump stick size, asked if "they are ready," "are your leg straps tight," and directed to "hook up." If jumpers answer "no", they are given more time to get ready. A briefing is then given. When the briefing is complete, jumpers are put in the door. (When a jumper is put in the door and when the briefing is given varies. Both may depend on the aircraft being used and thus, the spotter's routine.) The first jumper in the door is the prompt for the entire stick to perform a "four point check." (Drogue release handle in place and seated. Main release handle in place and seated. Reserve handle in place and seated. Lower reserve static line snap shackle properly hooked.) The spotter confirms jump altitude and jumpers' static lines are "clear." When over the exit point, the spotter gives one last visual check of the first jumper, slaps the first jumper on the shoulder, waits for several seconds to visually check the second jumper and provide for "horizontal separation", then slaps the second jumper. The same procedure is used if there are more jumpers on the stick. During refreshers, jumpers are directed to verbalize the jump count after exiting the door.

At the minimum, the spotter's briefing includes the type of pattern being flown, wind direction, wind speed (in yards of drift, which can be converted to miles per hour), and hazards in/near the jump spot. A spotter may also include wind speeds and directions at 3000 ft AGL (if known from aircraft instruments), ground winds if known, and pass on information they feel is important based on their experience. It is not uncommon to point out information about where and how jumpers are landing. Jumpers are also instructed not to crowd the door, creating an aircraft "center of gravity" problem.

For mechanical/structural aircraft emergencies, emergencies are categorized into critical and non-critical. Jumpers are given guidelines for dealing with both types. Procedures can vary, depending on the pilots' direction and current altitude. Jumpers will be taking direction from the pilot and spotter in most of these situations.

Mal-function Procedures

Malfunction procedures are categorized into four groups. 1) Drogue in tow, 2) Streamer, 3) Horseshoe, and 4) total (nothing out). Each category has several variations but each variation is dwelt with by using the correct procedure for that category.

In our refresher training, each malfunction is described with descriptions of possible effects on the canopy. After the classroom lecture/discussion, the jumper will suit up and performance assessed by the instructors on the malfunction simulator. A television is placed atop a steel frame. A VCR is connected to the television. A tape showing different malfunctions, including a "good canopy," is played. Risers are attached to the frame so the jumper, when hooked up, will be suspended under the television screen. The instructor chooses a malfunction and the jumper is required to perform the proper corrective action. Each smokejumper simulates getting "into the door," does a four point check, exits the aircraft and after verbalizing the jump count, checks his canopy and must perform the procedures for the malfunction he sees on the television screen. If no malfunction is observed, the jumper continues with his after opening checks.

Once the classroom and simulator sessions are complete, the jumpers are taken to the jump tower at the units. The jump tower consists of an exit tower (approximately forty feet high), a berm and a trolley system. A jumper is again expected to go through the procedures for hooking up his static line to the cable, do a four point check, perform a clean/tight exit, verbalize the jump count and if a malfunction is shouted out, perform the correct malfunction procedure. Immediately upon exiting the tower, the jumper starts sliding down the length of the cable and trolley system towards the berm. The jumper is critiqued on his performance and by timing him from when he left the tower until the time he finished his procedures, the instructors can tell him at what altitude his reserve would have opened. For the 2000 fire season, five good tower "jumps" were required.

Buddy checks/Equipment checks

A buddy check is performed before a jumper exits the aircraft. His jump partner, a spotter/assistant spotter, or another jumper can perform buddy checks. It is a complete check of a jumper with the jump suit and gear on. The check starts at the feet and proceed upwards. The stirrups must be under the heels of the boot. The leg pockets must be clean with nothing hanging out which could snag upon exit. The leg pocket ties must be tight. The leg straps must be snapped under the crotch strap. The belly bands on the main must go through a ring on each side and be securely connected to the female connector on the reserve. The date on the reserve must not be in the past. The thread and pins on the reserve must be properly seated and sealed. The RSL is traced to ensure correct routing and upper and lower snap shackles closed properly. The knife must be present, faced outward, and checked. The carabineers should be locked on both sides of the reserve. The chest strap must be correctly routed and velcro mated. The drogue release handle is properly and firmly seated. The main release handle is properly seated and mated. The three rings on both risers are checked for the proper sequence and the main release cable runs through the loops. The cable housing is tugged to further eliminate some known hook up "misroutes." The drogue three ring is checked in the same manner as on the main risers. The risers are straight and the pin on the parachute is properly seated. The static line and weak link are checked for abrasions or nicks. The static line clip is opened and closed to ensure it is still functioning properly. The jumper is asked if he has his helmet, gloves and let down rope. If all is in order, the check is complete. If an error is found, the individual giving the check fixes the problem, goes back a step and resumes the check until the entire check is complete.

Practice jumps

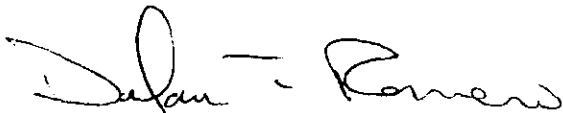
On a typical practice jump in the spring, jumpers are called together for the "pre-jump briefing." For the first set of jumps during refresher training, slides of the jump spot to be used are put on screen. The

slides are used to remind the jumpers of the layout of the spot, identify alley ways and run outs, hazards, tree lines (and therefore possible burbles), depressions/rises in the topography, and the general slope.

Objectives for the jump are verbally stated. Names for the various ground support jobs at the jump spot are again announced. Jumpers are directed to "suit up" or told when they can expect to suit up. When directed to suit up, each jumper puts on his jump gear, minus his helmet, gloves, and PG bag. A buddy check will be performed on everyone before they get on the aircraft. For the refresher jumps, the group is rounded into a circle and a trainer/spotter will have them perform a normal jump count. The next two or three simulations will involve malfunctions, yelled out by the spotter/trainer, which must be dwelt with using the correct procedures. Jumpers are then directed to the plane and a "ring check" and "pin check" are performed by the spotter and assistant spotter before the jumpers get on board the aircraft.

Once on board the aircraft and on taxi, it is suggested that jumpers make a habit of reviewing their malfunction procedures and one will often see a jumper going through the process of pulling his handles (without actually pulling) while taxiing to the active runway. Prior to getting in place for the take off roll, the spotter will ensure everyone has their helmets, gloves and seat belts on.

Once airborne, the spotter and assistant spotter will move to the rear of the aircraft, secure themselves to the aircraft, and set up for streamers. The streamers will indicate the wind direction and speed, show possible up or down air, and give the spotter his first opportunity to determine the exit point. The next set(s) of streamers should confirm his decision to proceed with the jump or call it off. Jumpers are instructed to watch the streamers and see for themselves the wind direction and drift. Many jumpers will have performed one last ring check by this time. As the check set(s) of streamers are dropped, plans between jump partners are being made. Plans are never set in stone but it give a jumper an idea of what his jump partner is going to do. From this point on, the events are identical to the process described in the aircraft procedures section. The spotter will get any information from the aircrew as to the wind speed and direction at jump altitude and get the wind speed and direction for the ground winds from the ground crew. This information is passed on to the jumpers during the briefing. The spotter will indicate the size of the stick, ask the jumpers if they are ready and if their leg straps are tight. When given an affirmative, the spotter will ask each stick if they see the spot and saw the streamers. An in the door briefing will be given and each jumper will be asked if they have any questions. The first jumper will be put in the door, which will prompt the four point check. The spotter will confirm that the aircraft is at jump altitude and that each jumper's static line is clear. The spotter will direct the jumpship over the exit point, at which point, the spotter will tell the jumper to "get ready," and slap him on the shoulder after one last visual check. The assistant spotter will clear the drogue d-bag from the door while the spotter is giving the second jumper a quick visual check and will then slap him on the shoulder. The time elapsed between jumpers should be roughly two seconds. This gives some initial horizontal separation to jumpers on the same stick.



Dalan Romero
Alaska Smokejumper Base Manager